

SUBJECT – SCIENCE

CLASS – VII

CHAPTER – 4, HEAT

1 MARK QUESTIONS

1. What is temperature?

Temperature is the reliable measure of the hotness of an object.

2. What is thermometer?

Thermometer is a device which is used to measure the temperature.

3. What is the use of clinical thermometer?

Clinical thermometer is used to measure the temperature of human body.

4. What is the temperature range of a clinical thermometer?

In a clinical thermometer, temperature ranges from 35°C to 42°C .

5. What is the temperature range of a laboratory thermometer?

In a laboratory thermometer, temperature ranges from -10°C to 110°C .

6. What is the normal temperature of human body?

The normal temperature of human body is 37°C or 98.4°F .

7. What is the use of kink in a clinical thermometer?

In a clinical thermometer, kink prevents the falling of the mercury level on its own.

2 MARKS QUESTIONS

8. Describe the structure of a clinical thermometer?

- A clinical thermometer consists of a long, narrow, uniform glass tube having a bulb at one end which contains mercury.
- It has a scale which ranges from 35°C to 42°C .

9. Name the different types of thermometer.

Different types of thermometer are –

- Clinical thermometer
- Laboratory thermometer
- Digital thermometer
- Maximum - minimum thermometer

10. What are the units used to measure the temperature?

Units used to measure temperature are

- Degree Celsius ($^{\circ}\text{C}$)
- Degree Fahrenheit ($^{\circ}\text{F}$)
- Kelvin.

11. What is the use of maximum – minimum thermometer?

Maximum – minimum thermometer gives information about maximum and minimum temperature of the day (weather report).

12. Name the methods of transfer of heat.

- Conduction
- Convection
- Radiation

13. What are the problems associated with the use of mercury in thermometer?

Mercury is a toxic substance and its disposal is very difficult if a thermometer breaks. This is the main problem which is associated with the use of mercury in thermometer.

14. Define conduction.

Conduction – The process by which heat is transferred from the hotter end to the colder end of an object is known as conduction. In solids, generally, the heat is transferred by the process of conduction.

15. Define convection.

Convection – the method of transfer of heat by the movement of the hotter particle into a colder region is called convection. In liquids and gases, generally, the heat is transferred by the process of convection.

16. Define radiation.

Radiation – the method of transfer of heat without any medium is called radiation.

Example – from the sun the heat reaches to Earth's surface by radiation.

17. Why we feel comfortable with dark coloured clothes in winter?

We feel comfortable with dark coloured clothes in winter because dark surfaces absorb more heat.

18. Why we feel comfortable with light coloured clothes in summer?

We feel comfortable with light coloured clothes in summer because light coloured clothes reflect most of the heat that falls on them.

3 MARKS QUESTIONS

19. Differentiate between conductor and insulator of heat.

The materials which allow heat to pass through them easily are called conductors of heat.

Example – aluminium, iron and copper.

The materials which do not allow heat to pass through them easily are called insulators of heat.

Example – plastic and wood

20. What are the precautions we should take while reading a clinical thermometer?

- Thermometer should be washed before and after use, with an antiseptic solution.
- Before use, mercury level should be below 35°C.
- Reading should be taken by keeping the level of mercury along the line of sight.

- Do not hold the thermometer by the bulb while reading.
- It should be handled with care.

21. What are the precautions we should take while reading a laboratory thermometer?

- Thermometer should be kept upright not tilted.
- Bulb should be surrounded from all sides by the substance of which the temperature is to be measured.
- The bulb should not touch the surface of the container.
- Thermometer should be washed before and after use.
- Before use, mercury level should be below -10°C .
- Reading should be taken by keeping the level of mercury along the line of sight.
- It should be handled with care.

22. Differentiate between sea breeze and land breeze.

Sea breeze – During the day, land gets heated up faster than the sea which in turn heats the air above the land. The warm air from the land rises above the land and warm air from the sea falls in to take its place. This movement of air from sea to land is called sea breeze.

Land breeze – at night, land cools down faster than the sea. Now the air above the sea is warmer than the air above the land. The warm from the sea rises up and the cool air from the land flows into take its place. This movement of air from land to sea is called land breeze.

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CHAPTER – 6, PHYSICAL AND CHEMICAL CHANGES

1 MARK QUESTIONS

1. What are physical properties?

Properties such as shape, size, colour and state of a substance are called its physical properties.

2. What is the chemical name of vinegar?

Chemical name of vinegar is acetic acid.

3. What is the chemical name of baking soda?

Chemical name of baking soda is sodium hydrogen carbonate.

4. What is the chemical formula of lime water?

Chemical formula of lime water is $\text{Ca}(\text{OH})_2$ {calcium hydroxide}.

5. What is the chemical formula of calcium carbonate?

Chemical formula of calcium carbonate is CaCO_3 .

6. What is crystallisation?

Crystallisation is a process of getting crystals of a pure substance from its solution.

2 MARKS QUESTIONS

7. What is a physical change?

A change in which a substance undergoes a change in its physical properties is called a physical change.

There is no formation of a new substance.

- Physical changes are generally reversible.

Example – melting of ice

8. What is a chemical change?

A change in which one or more new substances are formed is called a chemical change.

- Chemical changes are usually irreversible.

Example – burning of wood

9. Define galvanization.

- The process of depositing a layer of zinc on iron is called galvanization.
- It prevents rusting.

10. How stainless steel is made?

Stainless steel is made by mixing iron with carbon and metals like chromium, nickel and manganese. It does not rust.

11. What is ozone layer?

The ozone layer is a part of the Earth's atmosphere which protects us from the harmful ultraviolet radiations of the sun.

12. How ozone layer protects us from ultraviolet rays?

Ozone layer absorbs ultraviolet radiation and breaks down to oxygen. In this way, ozone layer protects us from ultraviolet rays.

13. What are the two conditions that are required for the process of rusting to take place?

Two conditions required for the process of rusting are –

- Presence of moisture
- Presence of oxygen

3 MARKS QUESTIONS

14. What happens when magnesium ribbon is burnt in air?

A magnesium ribbon burns with a brilliant white light and when it is completely burnt it forms a powdery ash. This powdery ash is of magnesium oxide.



15. What happens when magnesium oxide is dissolved in water?

When magnesium oxide is dissolved in water then it results in the formation of magnesium hydroxide.



16. What are the indicators of a chemical change?

Chemical changes generally take place with one or more of the following indicators

- Change in colour
- Generation of sound
- Absorption or release of heat
- Change in smell
- Formation of a gas

17. Why do the colour of copper sulphate solution changes from blue to green when iron nail is dipped in it?

This happens due to a chemical reaction between iron and copper sulphate.

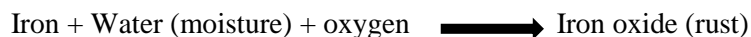
Iron displaces copper from copper sulphate solution and forms iron sulphate which is green in colour.



18. Why do iron objects develop a reddish brown layer on their surface on exposure to moist air?

This happens due to a chemical reaction between iron and moist air.

A new substance iron oxide is formed when iron reacts with the moist air. This process is known as rusting.



19. What happens when vinegar is added to baking soda?

On adding baking soda to vinegar a hissing sound is heard due to formation of bubbles of carbon dioxide.

Vinegar + Baking soda \longrightarrow Carbon dioxide + other substances

20. What happens when carbon dioxide gas is passed through lime water?

When carbon dioxide gas is passed through lime water then calcium carbonate is formed which turns the lime water milky.

Carbon dioxide + Lime water \longrightarrow Calcium carbonate + Water

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CHAPTER – 7

WEATHER, CLIMATE AND ADAPTATIONS OF ANIMALS TO CLIMATE

1 MARK QUESTIONS

1. What is weather?

The day- to- day condition of the atmosphere at a place with respect to the temperature, humidity, rainfall and wind speed is called weather at that place.

2. Who prepares the weather report?

The weather reports are prepared by the Meteorological Department of the Government.

3. What is climate?

The average weather pattern taken over a long time, say over 25 years is called the climate of the place.

4. Which liquid is filled in maximum-minimum thermometer?

Alcohol is filled in maximum-minimum thermometer.

5. What is adaptation?

The process of change by which an organism becomes better suited to its environment is called adaptation.

6. What is maximum-minimum thermometer?

An instrument used to measure maximum and minimum temperatures of a particular day is called maximum-minimum thermometer.

7. Name some countries that belong to tropical rain forest.

Countries that belong to tropical rain forest are India, Malaysia, Indonesia, Brazil and Uganda.

2 MARKS QUESTIONS

8. What is migration?

The seasonal movement of a complete population of animals from one place to another is called migration. Animals migrate in response to changes in temperature, food supply, breeding or the amount of daylight.

9. What is humidity? Name the device by which humidity is measured.

Humidity is the amount of water vapour present in the air. The device by which humidity is measured is hygrometer.

10. What is rain gauge?

Rain gauge is an instrument used to measure rainfall. It has a measuring cylinder with a funnel on top to collect rain water.

11. Why do animals living in Polar Regions have white fur or white feathers?

Animals living in Polar Regions have white fur or white feathers so that they are not easily visible in the snowy background which protects them from predators.

12. How toucan bird is adapted to live in tropical rain forest?

Toucan bird possesses a long and large beak. This helps a toucan to reach the fruits on branches which are otherwise too weak to support its weight.

13. How red eyed frog is adapted to live in tropical rain forest?

Red eyes frog is adapted to live on the trees. It has developed sticky pads on its feet which help it to climb trees.

3 MARKS QUESTIONS

14. Differentiate between weather and climate.

S. No.	Weather	Climate
1.	Weather is the atmospheric condition of a place on a particular day.	Climate is the average weather condition of a place over a long period of time.
2.	Weather changes every day and may change several times a day.	Climate generally remains unchanged for a few days.
3.	Weather conditions depend upon temperature, humidity and rainfall of a place.	The climate of a place depends upon altitude, latitude, distance from the speed and wind.

15. Write the characteristic features of the Polar Regions.

- Polar Regions are very cold for most part of the year.
- They are covered with snow.
- In winters, the temperature can be as low as -37°C .
- Examples of some countries that belong to the Polar Regions are Canada, Greenland, Iceland, Norway and Finland.
- Examples of some animals that live in Polar Regions are polar bears, penguin and whales.

16. How polar bear adapt themselves in Polar Regions?

- Polar bears have white fur so that they are not easily visible in the snowy background which protects them from predators.
- Polar bears have two thick layers of fur which protects them from cold environment.
- Polar bears have a layer of fat under their skin which insulates its body from cold.
- Polar bears move slowly and rest often to avoid getting overheated.
- Polar bear has a strong sense of smell which helps the polar bear to locate and catch its prey.
- Polar bears have long, curved and sharp claws which helps the polar bear to walk on ice.

- Polar bear is a good swimmer.

17. How penguins adapt themselves in Polar Regions?

- Its body is white and merges with the white background.
- It has a thick skin and a lot of fat to protect it from cold.
- Their bodies are streamlined and their feet have webs which makes them good swimmers.
- They huddle together with their friends to keep themselves warm.

18. Write the characteristic features of tropical rain forest.

- During hot summers, the temperature may cross 40°C and in winters, the temperature is around 15°C.
- These regions get plenty of rainfall.
- These regions are located near the equator and generally have a hot climate.
- Examples of some countries that belong to the tropical rain forests are India, Malaysia, Indonesia and Finland.
- Examples of some animals that live in tropical rain forests are monkeys, apes, gorillas, lions, tigers, elephants, lizards, snakes and birds.